UVAS CREEK DAM, RESERVOIR, CONDUIT AND WELL REPLENISHMENT PROJECT PROPOSED TO BE CONSTRUCTED JOINTLY WITH SANTA CLARA VALLEY WATER CON CONSERVATION DISTRICT

PROPOSED LLAGAS CREEK DAM, RESERVOIR AND WELL REPLENISHMENT PROJECT

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Report to the
Honorable Board of Directors

OF THE

SOUTH SANTA CLARA VALLEY WATER CONSERVATION DISTRICT

ON

Uvas Creek Dam, Reservoir, Conduit and Well Replenishment Project Proposed to be Constructed Jointly with Santa Clara Valley Water Conservation District

AND ON

Proposed Llagas Creek Dam, Reservoir and Well Replenishment Project

Project Report No. 15
March 1953

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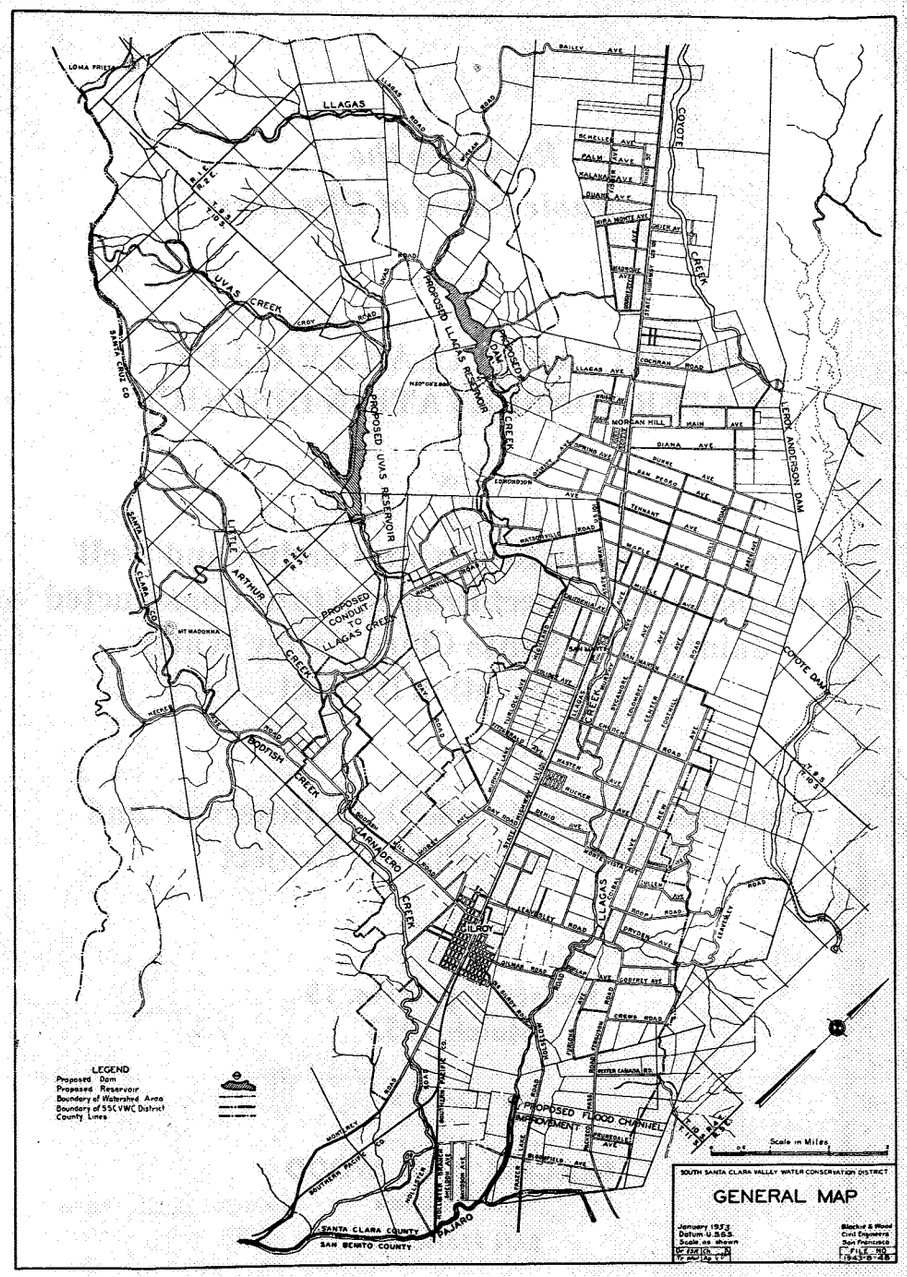
BLACKIE AND WOOD
Civil Engineers
SAN FRANCISCO

CHECKED _____ APPROVED _____
BLACKIE AND WOOD SAN FRANCISCO



BLACKIE AND WOOD
CIVIL AND CONSULTING ENGINEERS

544 MARKET STREET
SAN FRANCISCO 4, CALIF.

March 13, 1953

Subject: South Santa Clara Valley Water Conservation District

Description of Proposed Projects

HONORABLE BOARD OF DIRECTORS,
South Santa Clara Valley Water Conservation District
Gilroy, California

Gentlemen:

This description of the proposed Llagas Creek and Uvas Creek well replenishment project has been prepared pursuant to your instructions.

In January, 1952, we outlined a similar project that involved 10,000 acre feet of storage on Uvas Creek. The feature is the same in this project as in the former proposed project.

It has since been proposed and the details have been worked out to provide 34,000 acre feet of storage on Uvas Creek, jointly with the Santa Clara Valley Water Conservation District, hereinafter referred to as the Northern District. This Uvas development is to be jointly paid for and the water jointly used on the basis of 60 per cent to the Northern District and 40 per cent to this District. This results in a greater amount of water for this District at a lower unit cost per acre foot.

The area of the District is 34,900 acres extending from Tennant Avenue on the north to the Pajaro River on the south. The descriptive details of its organization, valuation, etc., were covered in Project Report 14 on file with the District. This report also went into considerable detail on surface and underground water supply and water requirements and replenishment of the underground supply that could be obtained from the proposed works. These details will not be repeated in this report.

Progress Report 14 shows the estimated average overdraft from the underground basin to be 7,300 acre feet annually for ten year period 1941 to 1951, as compared with the State's estimate of 8,000 acre feet annually under 1948-49 conditions. This is remarkably close agreement for estimates of this nature obtained by different parties on different bases.

Overdraft is that quantity of water extracted from the underground basin in excess of that replenished by natural or artificial percolation and

inflow. It is expected that with full development of the area, this overdraft will more than double.

By the herein proposed works the flood runoff on both Llagas and Uvas Creeks will be captured. Prior water rights will be satisfied and the balance will be released, under control, down the stream channels so that it may percolate to the underground reservoir and thus replenish the wells.

The District made application to the State for the water rights for this project in the latter part of 1950. This fixes the priority of the application, but the right itself depends on beneficial use. In addition, due diligence is required to consummate a water right. In other words, it is necessary to put the proposed works into operation in the immediate future or the rights that have been initiated will be lost. In that case they may be lost forever. Water has become too scarce and valuable in California to permit delays in development by one area when another wishes to proceed.

In Project Report 14 under the effect of the proposed works, it is stated "that had the proposed works been operated under the coordinated plan outlined from 1942 to 1951, the following results could have been accomplished.

(1) The supply available for the City of Gilroy could have been practically ten times its actual diversion in 1948 and about double its total use in that year;

(2) The supply available for use from the underground basin along Uvas and Carnadero Creeks could have been more than doubled;

(3) The percolation to the ground water from Llagas Creek could have been increased by approximately 9,500 acre feet per year on an average, or 30 per cent more than the estimated overdraft in this same period; and

(4) The maximum recorded 24 hour average flow at Llagas Dam of 3,550 cubic feet per second could have been reduced to about 600 cubic feet per second, with approximately proportional reductions at the lower end of the District.

It appears evident from the above that all of the present water problems of the District would be solved by the proposed works and that a reasonable margin would be available for development during the immediate future. The above statements can now be made even more strongly with the larger proposed Uvas Creek storage. Because of this and the imminent danger of losing these readily available sources of additional water supply forever, it is felt that the proposed works should be constructed at the earliest possible date.

PROPOSED WORKS

The proposed works are divided into two projects; one, the Llagas Creek Dam, Reservoir and Well Replenishment Project, and the other, the Uvas Creek Dam, Reservoir, Well Replenishment and Conduit to the Llagas

Creek, the construction of which is proposed to be undertaken jointly with the South Santa Clara Valley Water Conservation district and the Santa Clara Valley Water Conservation District. The description will therefore be divided into two parts.

The Llagas Creek Reservoir Works

The physical works proposed consist of storage on Llagas Creek, with 4000 acre feet dedicated to water conservation and 3500 acre feet reserved for flood control. The dam-site is about ½ mile upstream from Lane's Bridge and about three miles west of Morgan Hill. The proposed dam would be constructed of rolled earth fill, with a concrete lined spillway on the north abutment of sufficient capacity to pass safely the maximum peak flow and an outlet pipe through the south abutment capable of passing 750 cubic feet per second. The dam would be of more or less conventional design, have a length on top of about 650 feet and a heighth above stream bed of 90 feet. It will be necessary to relocate the county roads and several access roads that would be flooded by the stored water. The County will require higher standards for the relocated county roads than for existing roads. Because of the necessity of locating the new roads above the flood line of the proposed reservoir, it will require their construction in more rugged terrain than the existing roads.

The relocated county road would be on the left or northerly side of the proposed reservoir. Releases from the reservoir would be made directly to Llagas Creek.

There are 27 square miles of watershed tributary to the proposed reservoir and it is estimated that the mean annual runoff is 16,500 acre feet.

A substantial amount of flood damage has occurred in the lower end of the District during periods of peak flow in wet seasons. One of the major contributing factors is the inability of Lower Llagas Creek to handle flood flows without spilling over the banks of its poorly defined channel. This condition will be greatly, if not entirely, alleviated by the construction of a dam and reservoir capable of providing 7500 acre feet of storage, as proposed, thus permitting the withholding of water and reducing peak flows. Channel works and constructing levies on the lower two miles of the stream incident to the purposes of the District will also help rectify the condition.

Estimated Cost of Proposed Work

Llagas Dam and Appurtenances	$815,000.
Llagas Road Relocations	306,000.
Llagas Flood Channel Works	35,000.
Llagas Rights of Way	400,000.
TOTAL	$1,556,000.

The Uvas Creek Dam, Reservoir and Conduit Works

The Uvas Creek Dam, Reservoir and Conduit Works as proposed will be undertaken jointly by the South Santa Clara Valley Water Conservation District and the Santa Clara Valley Water Conservation District with the northern district paying 60% of the cost and being entitled to 60% of the water, and the balance of the cost will be paid for by the South Santa Clara Valley Water Conservation District and it will be entitled to 40% of the water.

The physical works proposed consist of providing for 34,000 acre feet of storage on Uvas Creek. The damsite is at the site of the present City of Gilroy diversion dam and about seven miles northwest of Gilroy. The proposed dam would be constructed of rolled earth fill, with a concrete lined spillway on the left or north abutment of sufficient capacity to pass safely the maximum peak flow and an outlet pipe through the left abutment capable of passing 93 cubic feet per second. The dam would be of more or less conventional design, have a length on top of about 1280 feet and a height above stream bed of 160 feet. It will either be necessary to relocate the County road and several access roads that would be flooded by the stored water or for the Districts to purchase the land on and through which the roads extend. Since most of this area is rugged terrain and the land is worth comparatively little, it is suggested that the District purchase the land rather than relocate the roads. A large saving will therefore be effected. The cost of the project as hereinafter set forth is based upon acquiring the land instead of relocating the roads. Releases from the reservoir would be made directly to the City of Gilroy pipe line, the stream bed for downstream users and percolation and to the proposed Llagas Creek conduit.

The proposed conduit to Llagas Creek will consist of 2.4 miles of reinforced concrete pipe of 48 inch inside diameter, extending from the control valve at Uvas dam, through the divide between the Uvas Creek and Llagas Creek watersheds on the Watsonville Road, and about 1.7 miles of canal extending from the end of the pipe line to Llagas Creek. This District would require 30 cubic feet per second and the Northern District 50 cubic feet per second or a combined capacity of 80 cubic feet per second. The Northern District would take delivery of its water at a diversion structure at the end of the pipe line on the north side of Watsonville Road and its conduit would extend northerly from this point.

There are 30 square miles of watershed tributary to the proposed reservoir. The average annual runoff has been estimated by the State to be about 23,700 acre feet.

Estimated Cost of Proposed Works

(40% of total cost)

Uvas Dam and Appurtenances	$1,463,600.
Uvas-Llagas Conduit	135,600.
Uvas Rights of way	512,400.
TOTAL	$2,111,600.

Accompanying this report and hereby made a part hereof is a map Plate 1 with the title "South Santa Clara Valley Water Conservation District General Map," dated January, 1953. The proposed works are shown thereon.

Respectfully submitted,

Blackie and Wood
By Harold Woods

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